BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band	)	PS Docket No. 06-229
	)	
Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010	)	WT Docket No. 96-86

COMMENTS OF THE CITY OF PHILADELPHIA ON THE NINTH NOTICE OF PROPOSED RULE MAKING AND THE PROPOSAL OF THE FEDERAL COMMUNICATIONS COMMISSION FOR THE IMPLEMENTATION OF A NATIONWIDE, BROADBAND, INTEROPERABLE PUBLIC SAFETY NETWORK IN THE 700 MHZ BAND

I. INTRODUCTION

The City of Philadelphia ("City") respectfully submits these Comments on the Ninth Notice of Proposed Rulemaking ("Ninth NPRM") and the Commission's Proposal for the Implementation of a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band ("Broadband Proposal").

The City's Comments focus on the workability of the Commission's Broadband Proposal. The City fully shares the concerns articulated by RCC Consultants, Inc. ("RCC") in Part IV of its Comments in this proceeding with respect to both the utility and the feasibility of the proposed broadband network, as described in the Ninth NPRM, and the evident fact that the Commission has not fully contemplated the implications of this far reaching and complex proposal for public safety users, or the necessary conditions of its success. The City joins RCC in urging the Commission to slow its apparent drive toward implementation until analysis has been completed, and reviewed by the public safety community in this proceeding, sufficient to demonstrate (1) benefit and need commensurate with the

likely enormous cost of the proposed nationwide network, and (2) its technical and financial feasibility without unacceptable burden on public safety users. The City applauds the Commission's effort to address interoperability on a national basis and agrees that all emergency personnel involved in an incident need to be able to communicate seamlessly. *See* Ninth NPRM ¶ 13. It is far from clear, however, that a single nationwide broadband infrastructure controlled by a single national licensee can achieve these shared objectives or will improve either communications or cooperation among the nation's first responders.

The City's principal concerns, described in detail in the remainder of these Comments and in Part IV of RCC's Comments, include the following: (1) the Ninth NPRM's failure to recognize that true interoperability is the result of technical network capabilities *plus* operating protocols that are best developed at the local and regional level, and (2) the Commission has not developed a comprehensive and workable business plan providing for anticipated costs to construct and operate the proposed broadband network, projecting user fees, and evaluating adoption rates by public safety agencies and by the commercial users whose fees for shared, "preemptible" use of the spectrum appear to be a principal means of paying for the network. The City respectfully urges the Commission to delay any implementation decision until it fully addresses these concerns and makes its findings available for public discussion in this proceeding.

II. DISCUSSION

A. Local and Regional Control of Public Safety Communications.

The Ninth NPRM effectively shifts the balance of interoperability planning away from regional and local control and sharply in favor of a model of national standardization. By eliminating wideband use of the public safety 700 MHz spectrum and by excluding Regional Planning Committees ("RPC") from the development process, the Commission suggests movement away from its long-established recognition of the value of RPCs and regional and local institutions in assuring that spectrum allocations effectively meet regional and local needs. As a result, the Commission's Broadband Proposal fails to recognize the fundamentally local nature of first responses to emergencies and the critical interdependence between the state, local, and regional agencies responsible for emergency response.

The City believes that the proposed national network will not achieve interoperability because the technical ability to communicate is not sufficient for cross-jurisdictional cooperation and mutual aid. Rather, the inter-jurisdictional agreements, policies and standard operating procedures established by public safety agencies at the local and regional level are necessary conditions for establishing interoperability in the only sense that matters – coordinated support and mutual aid by multiple independent agencies on terms that all know, follow, and can rely on

others to follow. Ultimately, local and regional agreement, and therefore local and regional control, is vital in establishing an effective public safety interoperability model.

The Department of Homeland Security ("DHS") emphasizes this critical point in its January 2007 analysis *Tactical Interoperable Communications Scorecards – Summary Report and Findings* ("Scorecard"). This evaluation of communications interoperability in major metropolitan areas focuses specifically on the existence and maturity of regional "governance structures" and "standard operating procedures"; and on "usage," understood as the ability to use equipment in accordance with agreed operating procedures rather than technical capacity to communicate. *See* Scorecard, page iii.[1] The City suggests that the Commission adopt DHS' more comprehensive conception of interoperability and that the Commission's focus should be as much on regional operating procedures and policies as on technology.

1. *Interoperation Protocols Are Best Established at the Local and Regional Level.*

The Commission has not addressed the implicit operational problems associated with the absence of local control of communications in an emergency. The Commission's Broadband Proposal gives all control over access to service to the national licensee and makes no provision for immediate access by the state, local, and regional agencies providing the first response to a major incident. This both opens the door to interference by non-responding agencies and calls into question the ability of first responders to override the Commission's proposed "secondary" commercial users of public safety spectrum in an emergency situation.

The Commission assumes without explanation or justification that a national licensee will be able to resolve interference and user conflicts seamlessly and immediately. This assumption goes against the often painful and time-consuming process of interference resolution, even under the application of best practices, that is now well known to public safety users. The risks are amply demonstrated by the interference issues arising in the 800 MHz band, where, significantly, best practices alone were deemed by the Commission insufficient to resolve interference. Under

[1] "DHS understands that barriers to interoperable communications are both technical and operational. Each agency typically has its own unique legacy technologies, requirements, operating environments, laws, and processes. Therefore, achieving interoperability requires that, in addition to addressing technology and disparate communications systems, agencies examine governance, procedures, training, exercises, and usage." Scorecard, pages 4-5. Note also that the SAFECOM Interoperability Continuum on which DHS bases its Scorecard identifies a shared network ("Technology") as only one of *five* elements necessary to provide optimum interoperability, the others being "Governance," "Standard Operating Procedures," "Training and Exercises," and equipment "Usage." We suggest the Ninth NPRM should adopt a similarly comprehensive approach to interoperability.

the Ninth NPRM, the only recourse for interference issues is to the national licensee. Based on its experience in the 800 MHz band, the City cannot support this centralized regime without a full and convincing account of how interference resolution by the national licensee would function in practice to secure the immediate access that first responders require.

The resulting uncoordinated access to the proposed broadband service presents serious risks for the agencies with direct responsibility for managing the "first response" to an incident. Local agencies have developed specific talk group arrangements to coordinate communications among users and between agencies and prevent disruptions. Necessarily, such talk group arrangements are made at the local or regional level because they are determined by local communications needs, based on the organization and deployment patterns of local agencies.[2] Coordination of talk groups on a national level has never been developed , and it is questionable whether national coordination could be effective. The Ninth NPRM does not recognize this issue, let alone address whether and how it can be resolved.

2. *The Success of Regional Cooperation is Founded On Operational Coordination.*

The Ninth NPRM fails to acknowledge the extraordinary progress in interoperability and mutual aid actually achieved on a local and regional basis, for example, in the Nation Capital Region (the "NCR"). The NCR model demonstrates that true interoperability and its effectiveness involve much more than the technical ability to communicate, and in fact depend upon close operational coordination – *e.g.*, the NCR's protocol, adopted by all participating agencies, that response will be by the closest available units without regard to jurisdiction. Without such operational coordination at the regional and local levels, the ability to communicate across agency boundaries, though a necessary condition, will not by itself achieve the genuine interoperability, coordinating emergency response and mutual aid among multiple jurisdictions and agencies, that the Ninth NPRM clearly seeks. As the NCR experience demonstrates, detailed emergency response planning at the local and regional level – nowhere addressed by the Ninth NPRM –

[2] The talk groups Philadelphia assigns to a municipal department are developed by closely mirroring present operations while allowing administrative-only conversations. In addition to talk groups dedicated to departmental communications, the City's trunked radio system allows it to create special talk groups for radio users from different departments to communicate with each other during special events, emergencies, and other times of special need. These talk groups bring together users and agencies that do not have a day-to-day need to communicate with each other but must communicate to ensures coordinated response. Similar talk groups can be set up for interoperation with outside agencies during emergencies. It is difficult to see how a national network, operated by a national licensee, could support or integrate with such flexible, and changing, local talk group structures.

is the most effective way to achieve this objective shared by all in the public safety community.[3]

This point applies equally when assistance is provided, not within a region, but from New York to California or from Florida to Texas –the one scenario the Ninth NPRM intends to address, to the exclusion of the much more common need for coordinated regional responses. The effectiveness of assistance across the nation also depends on the seamless integration of external assistance and local coordination. This is a matter of shared policies and shared protocols and can never be achieved by communications interoperability alone.

Moreover, it is not clear that a national network is either necessary or useful in the Ninth NPRM's scenario of a true national emergency where nationwide assistance is required. Interoperability may be far more effectively established simply by issuing local communications gear to out-of-state responders, together with local applications and user protocols, as opposed to assistance providers using their own equipment not programmed with local configurations and user rules. A national interoperability program can best address this need by focusing on standards and model policies for cooperation among agencies from different parts of the country. Certainly the Commission should fully evaluate the viability of this approach before launching the implementation of an enormously expensive nationwide broadband infrastructure.

In summary, regional cooperation as the basis for interoperability creates a model that addresses the real need of public safety agencies: regional mutual aid to respond to disasters that are regional in nature. A single nationwide network will not achieve the interoperability sought by the Ninth NPRM; rather, it is operating procedures, protocols, and regional agreements that create real interoperability. Creating a nationwide communications network alone will not ensure interoperability, and for the reasons discussed in these Comments and RCC's submission, is neither a necessary nor an acceptably cost-effective means of providing communications interoperability. The City looks to the National Capitol Region ("NCR") as a model for regional interoperability. With more than 35,000 radios in the region, and with many independent governments and numerous

[3] For the Philadelphia Urban Area, the Southeast Pennsylvania Counter-Terrorism Task Force ("SE CTTF") establishes interoperation standard operating procedures ("SOP") for agencies in Southeastern Pennsylvania, Southern New Jersey and Northern Delaware. The SOPs properly provide that the incident commander in conjunction with the local dispatch center has authority to determine communications needs in an emergency situation and assign shared resources accordingly. The specific characteristics of the Philadelphia Urban Area differ from many urban areas, and from the CTTF templates appropriate for those areas, because it straddles three states, making the SOP adopted here appropriate. Where this special circumstance does not exist, it may be logical for the state to be the lead agency and make decisions regarding interoperation needs and resources. This is one example of why regional characteristics and needs should determine SOPs rather than national templates and a national licensee.

individual public safety radio systems in a small area, the NCR is one of the most complex interoperability environments in the country. Yet interoperability within the NCR depends as much on the mutual aid policies and shared standards of operation of the first response agencies in and around Washington, D.C. as it does on the technical integration of their radio systems.

The City urges the Commission to reorient its interoperability initiative to address how the model adopted by DHS and represented by the NCR, with its essential focus on shared policy and operating procedures, can best be replicated throughout the country. We respectfully suggest that such an effort will be far more cost effective than an all-out drive to construct a broadband network that clearly is not sufficient to achieve the goals of the Ninth NPRM, and on the sparse analysis set forth in the NPRM, does not appear to be necessary to achieve those goals.

B. The Ninth NPRM Fails to Provide a Comprehensive and Workable Business Plan for the Proposed Broadband Network.

The Commission appears to be proceeding to implementation without first establishing a competent business model or business plan for the proposed network, identifying costs, revenues sufficient to construct and operate the network, and adoption and transition costs. Without a detailed business plan and commercial analysis, the public safety community cannot adequately evaluate the benefits of the Commission's proposal against anticipated costs and probable user fees. Such a detailed business model should be developed before the Commission moves towards implementation.

1. *Fair and Reasonable Network Costs and Fees-For-Services Are Yet to be Demonstrated.*

The Commission optimistically assumes that the fee-for-service rates will be fair, reasonable, and attractive to public safety agencies and provides no mechanism for change if those rates do not attract users. Without a competent business plan, including construction cost estimates and probable revenues from the proposed secondary commercial use of the network, it is impossible to evaluate this critical assumption. If it is incorrect and user fees are in the view of many jurisdictions unreasonably high, then as discussed below, a low adoption rate will prevent the proposed network from achieving even technical communications interoperability. For this reason alone, it is clear the Commission's Broadband Proposal is not adequately developed to support implementation.

For the City, the benefits of a broadband network are questionable given that broadband appears to be a necessity mainly for one application, real-time video, which is of limited utility based on the City's analysis of its public safety communication needs. Wideband is far less expensive to deploy, based on cost per square mile of coverage, and sufficient for the applications the City's users now

contemplate (e.g. transmitting maps and information in the City's geographical information system to support emergency field operations) or expect to consider in the near future (e.g. transmission of biometric data on responders at the scene of an emergency in order to monitor physical condition and ensure timely assistance where needed). Furthermore, the City's investigations indicate that its existing 800 MHz radio system can be modified, by adding data subsystems, to permit these uses. We believe our situation is typical of major metropolitan areas. Admittedly, broadband capacity would benefit such applications. Our concern, unaddressed by the Ninth NPRM, is that the high cost of a broadband network will result in user fees that are not cost effective given the City's expected needs and the availability of alternatives, whether wideband systems or 800 MHz data subsystems, that *are* cost effective. (And as argued above, the atypical case where police, fire or medical responders come from outside the region to offer assistance in an emergency is best addressed by the simple and more economically efficient solution of making sure that all jurisdictions have a "cache" of extra radios, programmed with local procedures and protocols, available to support communications with them.) The proposed broadband network can be cost effective only if it really is necessary to support applications that most users will need every day. The Ninth NPRM does not make this case.

2. *The Commission's Broadband Proposal Assumes without Argument that Adoption Will be Universal.*

The Commission's Broadband Proposal assumes that if a national public safety broadband network is built, all or most local and state agencies will adopt the service, whatever fee-for-service structure proves necessary to support construction and operating costs and notwithstanding that the network will provide capacity that few jurisdictions may want or need. Certainly the City agrees that adoption of the national broadband service must be voluntary, as provided in the Commission's proposal. The City and other public safety users in the 800 MHz band cannot be expected to incur the cost of discarding and replacing their systems immediately after completing the Commission's years-long frequency reconfiguration process.

Voluntary participation means, however, that the national network must provide capacity and intercommunication capabilities that are truly needed, and do so at affordable cost. For the reasons described earlier in these Comments, both are highly questionable at this stage in the development of the Commission's proposal.

At least one very serious technical issue also militates strongly against rapid universal adoption. Data transmissions, unlike voice, depend on software applications. The ability of multiple jurisdictions and of responders from distant states to communicate data requires that they have the same applications or applications that interface seamlessly. Standardizing data applications to the point of supporting interoperability is a potentially formidable task, with heavy cost

implications for local governments in addition to the disruption of having to replace software systems. The scope of this task and its impact should be fully understood and reviewed by public safety agencies in this proceeding before the Commission moves towards implementation. The proposed broadband network is, after all, a data network. Narrowband works well for voice and text communications alone, and the driver for a broadband network appears to be bandwidth-intensive digital applications like real-time video. If replacement costs are high and disruptive software implementations likely, the chances of securing universal or even widespread adoption by public safety agencies will be minimal. Note also that low adoption by public safety would amount to ceding this public safety spectrum to commercial users – clearly not the Commission's intent in the Ninth NPRM and certainly not an acceptable outcome to public safety users.

The risks of limited adoption are exacerbated by the top-down approach of the Ninth NPRM, which gives all authority for design, construction, and operation to the national licensee. A sounder approach, far more likely to bring universal adoption, would be to build national interoperability infrastructure by developing and then integrating local and regional infrastructures, including the all-important shared policies and procedures, as in the example of the National Capital Region.

In summary, if user fees and implementation costs are high but need and utility are low, then users will choose not to integrate their operations with the national network or perhaps even to monitor traffic on the network. To the extent the network is not adopted, there will of course be no national interoperability. Based on the unresolved adoption issue alone, it is clear the Commission's Broadband Proposal is not developed sufficiently to support an implementation decision at this time.

3. *The Feasibility of Sharing Spectrum with Commercial Carriers is Questionable and Yet To Be Demonstrated.*

The Commission's proposed "public-private partnership" for use of the national network is problematic based on the past experience of public safety users in the 800 MHz band, particularly the evident reliance on revenues from commercial users sharing public safety spectrum on a "preemptible" basis to fund the network. There are many challenges inherent in balancing the needs of public safety against the needs of commercial users. Ultimately, the conflicts between these legitimate interests can overwhelm the system and compromise its paramount goal of enhancing public safety. If commercial users are easily preempted, then they will not be able to rely on the system and are unlikely to pay the significant fees associated therewith. If commercial users are not easily preempted, then public safety communications could be jeopardized – as all of us in the 800 MHz band have learned from years of struggling to resolve commercial interference.

This substantial risk of the proposed public-private partnership is not addressed by the Ninth NPRM. Instead, the Commission simply assumes the viability of the public private partnership model without considering the evidence to the contrary. The largest currently-ongoing public-private partnership affecting public safety is the Commission's 800 MHz frequency reconfiguration project. No jurisdiction involved in this process can seriously claim that it has been smooth, quick, or trouble-free. Certainly much more analysis is necessary to support the Commission's optimistic assumption that sharing use and costs of the network will result in rapid deployment, attractive commercial terms, or smooth operations. Again, it is clear the Commission's Broadband Proposal is not adequately developed to support an implementation decision.

III. CONCLUSION

For the foregoing reasons, the City opposes any decision by the Commission to proceed towards implementation of the proposed broadband network at this time. The City respectfully urges the Commission to address the concerns articulated in these Comments, to investigate fully the technical, operational, and business issues we have identified, and to present the results of its investigations for the review and comment of the public safety community in this proceeding.

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Respectfully submitted,

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